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High- sensitivity capacitance method for measuring thermal diffusivity and thermal expansion: results on aluminum and copper / Sparavigna, Amelia Carolina; Giachello, G.; Omini, M.; Strigazzi, Alfredo. - In: INTERNATIONAL JOURNAL OF THERMOPHYSICS. - ISSN 0195-928X. - 11:(1990), pp. 1111-1111.

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Journal International Journal of Thermophysics
 Publisher Springer Netherlands
 ISSN 0195-928X (Print) 1572-9567 (Online)
 Issue Volume 11, Number 6 / November, 1990
 DOI 10.1007/BF00500564
 Pages 1111-1126
 Subject Collection Physics and Astronomy
 SpringerLink Date Monday, December 06, 2004

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Physics of Surfaces and Interfaces

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Received: 13 November 1989

Abstract Thermal diffusivity and thermal expansion in high-conducting solids can be measured by means of a capacitance method, which turns out to be simple, reliable, and accurate and yields the first property with an accuracy of $\sim 1\%$ and the second one with an accuracy of $\sim 2\%$. Preliminary results, which are consistent with the literature, have been obtained on pure aluminum (99.999%) and on commercial copper, both at near room temperature.

Key words capacitance method - thermal diffusivity - thermal expansion

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